Pending Claims

This listing of claims is a courtesy copy of the pending claims. No amendments have been made in this Reply.

1. (original) A communication device for duplex communication comprising:

a transmitter for transmitting, during a first portion of said first period of time, a first voice signal encoded at a first voice coding rate, said first voice signal comprising first voice data, first error correction data having a first error correction rate and first control data;

a receiver for receiving, during a second portion of a first period of time, a second signal having a first signal quality and including at least second control data; and

a processing device coupled to said transmitter and receiver and adapted for performing an algorithm for,

estimating said first signal quality,

causing said communication device to operate in a first mode of operation when said signal quality estimation is above a threshold, wherein said first voice coding rate is adjusted as a function of said first and second control data, and

causing said communication device to operate in a second mode of operation when said signal quality estimation is below said threshold, wherein said first error correction rate is adjusted as a function of said first and second control data.

2. (original) The communication device of Claim 1, wherein said processing device is a digital signal processor.

3. (original) The communication device of Claim 1, wherein said first control data includes information indicating a first level of confidence in the presence of speech in said first voice signal, and said second control data includes information indicating a second level of confidence in the presence of speech in said second signal.

4. (original) The communication device of Claim 3, wherein in said first mode of operation said processing device is further adapted for:

causing said first voice coding rate to be adjusted to an increased voice coding rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a low confidence in the presence of speech in said second signal, for enabling said transmitter to transmit, during said first portion of said first time period, said first voice signal encoded at said increased voice coding rate and for enabling said receiver to receive, during said second portion of said first time period, said second signal comprising said second control data, and

causing said first voice coding rate to be adjusted to a first reduced voice coding rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a high confidence in the presence of speech in said second signal, for enabling said transmitter to transmit, during said first portion of said first time period, said first voice signal encoded at said first reduced voice coding rate and for enabling said receiver to receive, during said second portion of said first time period, said second signal encoded at a second reduced voice coded rate and comprising at least second voice data and said second control data.

5. (original) The communication device of Claim 4, wherein said first and second reduced voice coding rates are essentially the same.

6. (original) The communication device of Claim 4, wherein said first error correction rate is caused to remain essentially constant.

7. (original) The communication device of Claim 4, wherein said increased voice coding rate is a maximum voice coding rate.

8. (original) The communication device of Claim 3, wherein in said second mode of operation said processing device is further adapted for:

causing said first error correction rate to be adjusted to an increased error correction rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a low confidence in the presence of speech in said second signal, for enabling said transmitter to transmit, during said first portion of said first time period, said first voice signal including said first error correction data having said increased error correction rate and for enabling said receiver to receive, during said second portion of said first time period, said second signal comprising said second control data, and

causing said first error correction rate to be adjusted to a first reduced error correction rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a high confidence in the presence of speech in said second signal, for enabling said transmitter to transmit, during said first portion of said first time period, said first voice signal including said first error correction data having said first reduced error correction rate and for enabling said receiver to receive, during said second portion of said first time period, said second signal comprising at least second voice data, second error correction data having a second reduced error correction rate and said second control data.

9. (original) The communication device of Claim 8, wherein said first and second reduced error correction rates are essentially the same.

10. (original) The communication device of Claim 8, wherein said first voice coding rate is caused to remain essentially constant.

11. (original) The communication device of Claim 8, wherein said increased error correction rate is a maximum error correction rate.

12. (original) The communication device of Claim 3, wherein said processing device is further adapted for generating a first voice activity detector number corresponding to said first level of confidence.

13. (original) The communication device of Claim 1 further comprising switching means for causing said communication device to switch between said first and second modes of operation.

14. (original) The communication device of Claim 13, wherein said switching means is further adapted for causing said first voice coding rate to be switched between an increased voice coding rate and a first reduced voice coding rate during said first mode of operation.

15. (original) The communication device of Claim 13, wherein said switching means is further adapted for causing said first error correction rate to be switched between an increased error correction rate and a first reduced error correction rate during said second mode of operation.

16. (original) The communication device of Claim 13, wherein said switching means is said digital signal processor.

17. (original) A communication device for duplex communication comprising:

a transmitter for transmitting, during a first portion of a first period of time, a first voice signal encoded at a first voice coding rate, said first voice signal comprising first voice data, first error correction data having a first error correction rate and first control data that includes information indicating a first level of confidence in the presence of speech in said first voice signal;

a receiver for receiving, during a second portion of said first period of time, a second signal having a first signal quality and including at least second control data that includes information indicating a second level of confidence in the presence of speech in said second signal; and

a processing device coupled to said transmitter and receiver and adapted for performing an algorithm for,

estimating said first signal quality,

causing said communication device to operate in a first mode of operation when said signal quality estimation is above a threshold, wherein said processing device is further adapted for,

causing said first voice coding rate to be adjusted to a maximum voice coding rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a low confidence in the presence of speech in said second signal, for enabling said transmitter to transmit, during said first portion of said first time period, said first voice signal encoded at said maximum voice coding rate and for enabling said receiver to receive, during said second portion of said first time period, said second signal comprising said second control data, and

causing said first voice coding rate to be adjusted to a first reduced voice coding rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a high confidence in the presence of speech in said second signal, for enabling said transmitter to transmit, during said first portion of said first time period, said first voice signal encoded at said first reduced voice coding rate and for enabling said receiver to receive, during said second portion of said first time period, said second signal encoded at a second reduced voice coded rate and comprising at least second voice data and said second control data, and causing said communication device to operate in a second mode of operation when said signal quality estimation is below said threshold, wherein said processing device is further adapted for,

causing said first error correction rate to be adjusted to a maximum error correction rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a low confidence in the presence of speech in said second signal, for enabling said transmitter to transmit, during said first portion of said first time period, said first voice signal including said first error correction data having said maximum error correction rate and for enabling said receiver to receive, during said second portion of said first time period, said second signal comprising said second control data, and

causing said first error correction rate to be adjusted to a first reduced error correction rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a high confidence in the presence of speech in said second signal, for enabling said transmitter to transmit, during said first portion of said first time period, said first voice signal including said first error correction data having said first reduced error correction rate and for enabling said receiver to receive, during said second portion of said first time period, said second signal comprising at least second voice data, second error correction data having a second reduced error correction rate and said second control data.

18. (original) A system for duplex communication that includes a communication device in accordance with the communication device of Claim 1.

19. (original) A method for duplex communication in a communication device, said method comprising the steps of:

transmitting, during a first portion of a first period of time, a first voice signal encoded at a first voice coding rate, said first voice signal comprising first voice data, first error correction data having a first error correction rate and first control data;

receiving, during a second portion of said first period of time, a second signal having a first signal quality and including at least second control data;

estimating said first signal quality;

causing said communication device to operate in a first mode of operation when said signal quality estimation is above a threshold, wherein said first voice coding rate is adjusted as a function of said first and second control data; and

causing said communication device to operate in a second mode of operation when said signal quality estimation is below said threshold, wherein said first error correction rate is adjusted as a function of said first and second control data.

20. (original) The method of Claim 19, wherein said first control data includes information indicating a first level of confidence in the presence of speech in said first voice signal, and said second control data includes information indicating a second level of confidence in the presence of speech in said second signal, and said step of causing said communication device to operate in said first mode of operation further comprises:

causing said first voice coding rate to be adjusted to an increased voice coding rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a low confidence in the presence of speech in said second signal, for transmitting during said first portion of said first time period, said first voice signal encoded at said increased voice coding rate and for receiving during said second portion of said first time period, said second signal comprising said second control data; and

causing said first voice coding rate to be adjusted to a first reduced voice coding rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a high confidence in the presence of speech in said second signal, for transmitting during said first portion of said first time period, said first voice signal encoded at said first reduced voice coding rate and for receiving during said second portion of said first time period, said second signal encoded at a second reduced voice coded rate and comprising at least second voice data and said second control data.

21. (original) The method of Claim 19, wherein said first control data includes information indicating a first level of confidence in the presence of speech in said first voice signal, and said second control data includes information indicating a second level of confidence in the presence of speech in said second signal, and said step of causing said communication device to operate in said second mode of operation further comprises:

causing said first error correction rate to be adjusted to an increased error correction rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a low confidence in the presence of speech in said second signal, for transmitting during said first portion of said first time period, said first voice signal including said first error correction data having said increased error correction rate and for receiving during said second portion of said first time period, said second signal comprising said second control data; and

causing said first error correction rate to be adjusted to a first reduced error correction rate when said first level of confidence indicates a high confidence in the presence of speech in said first voice signal and said second level of confidence indicates a high confidence in the presence of speech in said second signal, for transmitting during said first portion of said first time period, said first voice signal including said first error correction data having said first reduced error correction rate and for receiving during said second portion of said first time period, said second signal comprising at least second voice data, second error correction data having a second reduced error correction rate and said second control data.

22. (original) The method of Claim 19 further comprising the step of switching between said first and second modes of operation.

23. (original) The method of Claim 22 further comprising the step of switching said first voice coding rate between an increased voice coding rate and a first reduced voice coding rate during said first mode of operation.

24. (original) The method of Claim 22 further comprising the step of switching said first error correction rate between an increased error correction rate and a first reduced error correction rate during said second mode of operation.